

WHAT IS CLAIMED IS:

1 ~~Sub 1~~ 1. A method of forming an electrical connection between two devices,
2 comprising:
3 bonding an interconnection on a first contact pad of a first component,
4 wherein said interconnection comprises
5 a conductive polymer comprising a polymer component and a conductive
6 component; and,
7 a first solderable cap disposed in contact with said conductive polymer;
8 and,
9 soldering said first solderable cap to a second contact pad of a second
10 component.

1 2. The method of claim 1, wherein said polymer component comprises a
2 thermoplastic polymer, a copolymer, or a blend, and said conductive component
3 comprises electrically conductive particles.

1 3. The method of claim 2, wherein said polymer component comprises a
2 nylon, polysulfone, polyester, polyimide, siloxane, ethylene, vinyl acetate, aryl-ether,
3 polyutethane, polyisocyanate, polyether, polyester, acrylate, or polyvinyl chloride.

1 4. The method of claim 2 wherein said conductive particles comprise gold,
2 silver, palladium, oxide free noble alloys of gold, silver, and palladium, or a noble metal.

1 5. The method of claim 1, wherein said first solderable cap comprises gold,
2 nickel, silver, copper, zinc, palladium, platinum, indium, tin, bismuth, or lead.

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1 6. The method of claim 1, wherein said first solderable cap has a width and a
2 thickness, and said width is about 0.010 inches to about 0.050 inches, and said thickness
3 is about 0.002 inches to about 0.01 inches.

1 7. The method of claim 1, wherein said conductive polymer has a width and
2 a thickness, and said width is about 0.010 inches to about 0.050 inches, and said thickness
3 is about 0.002 inches to about 0.058 inches.

1 8. The method of claim 1, wherein said conductive polymer has a resistivity
2 of less than about 0.05 ohms per centimeter.

1 9. The method of claim 1, wherein said first solderable cap is a solder ball.

1 10. The method of claim 1 wherein said bonding comprises placing said
2 interconnection in contact with said first contact pad and heating said conductive
3 polymer.

1 11. The method of claim 1 wherein said bonding comprises:
2 applying said conductive polymer in an uncured state on said first contact
3 pad;
4 disposing said first solderable cap in contact with said conductive
5 polymer; and,
6 curing said conductive polymer.

1 ~~12. A method of forming an electrical connection between two devices,~~
2 ~~comprising:~~
3 ~~soldering a second solderable cap of an interconnection to a first contact~~
4 ~~pad of a first component, wherein said interconnection comprises:~~
5 ~~a conductive polymer comprising a polymer component and a conductive~~
6 ~~component;~~
7 ~~a first solderable cap disposed in contact with said conductive polymer;~~
8 ~~and,~~
9 ~~said second solderable cap disposed in contact with said conductive~~
10 ~~polymer opposite said first solderable cap; and,~~
11 ~~soldering said first solderable cap to a second contact pad of a second~~
12 ~~component.~~

1 ~~13. The method of claim 12, wherein said polymer component comprises a~~
2 ~~thermoplastic polymer, a copolymer, or a blend, and said conductive component~~
3 ~~comprises electrically conductive particles.~~

1 ~~14. The method of claim 13, wherein said polymer component comprises:~~
2 ~~a nylon, polysulfone, polyester, polyimide, siloxane, ethylene, vinyl~~
3 ~~acetate, aryl-ether, polyutethane, polyisocyanate, polyether, polyester, acrylate, or~~
4 ~~polyvinyl chloride.~~

1 ~~15. The method of claim 13 wherein said conductive particles comprise gold,~~
2 ~~silver, palladium, oxide free noble alloys of gold, silver, and palladium, or a noble metal.~~

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2 16. The method of claim 12, wherein said first solderable cap and said second
3 solderable cap comprise gold, nickel, silver, copper, zinc, palladium, platinum, indium,
tin, bismuth, or lead.

1 17. The method of claim 12, wherein said first solderable cap and said second
2 solderable cap have a width and a thickness, and said width is about 0.010 inches to about
3 0.050 inches, and said thickness is about 0.002 inches to about 0.01 inches.

1 18. The method of claim 12, wherein said conductive polymer has a width and
2 a thickness, and said width is about 0.010 inches to about 0.050 inches, and said thickness
3 is about 0.002 inches to about 0.058 inches.

1 19. The method of claim 12, wherein said conductive polymer has a resistivity
2 of less than about 0.05 ohms per centimeter.